Technology in the Face of the Challenges of the Long-Term Care System for the Elderly in Spain

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Abstract. Spanish society, as in other developed countries, is experiencing remarkable aging. The prolongation of longevity results in the existence of an increasing number of dependent older adults. Likewise, in the field of technology, outstanding advances are being made to improve the lives of the elderly. This article analyzes the relationship between the Spanish long-term care system for the elderly and technology. We identify the most relevant issues related to the long-term care system in Spain: the "familist" model of the Welfare State, the multilevel model of the LTC system, and the impact of the Long-Term Care Law and the 2008 crisis, and the informal caregivers of the elderly. We contrast each of these topics with proposals from the scientific and institutional fields related to technologies. Moreover, we establish some possible research lines related to the long-term care system for the elderly with technologies.

Keywords: Long-term care · Technology · Public policies · Aging · Elderly dependents

1 Introduction

Longevity is a significant concern in developed countries [7]. Profound socio-cultural changes have lowered birth rates, and progress in the field of health has led to increasingly longer lives. These phenomena result in an aging society [4]. In the case of Spain, the aging index has increased notably, rising from 39.47 in 1980 to 125.79 in 2020. This increase has accelerated in recent years, rising by more than two points annually since 2014 [38]. It is estimated that by 2050, people over 65 in Spain will account for over 30% of the population, with 13 million. Of these, more than 4 million will be over 80 years old [17].

To meet the needs of an increasingly aging population, States have opted for different types of public policies. In the case of older people whose physical or cognitive deterioration does not allow them to carry out the tasks of their daily lives normally, long-term care (LTC) policies for the elderly have been developed. In Spain, these public policies

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were implemented in the 1980s, later than in most Western European countries, and reached a turning point with the entry into force on January 1, 2007, of Law 39/2006, of December 14, on the Promotion of Personal Autonomy and Care for Dependent Persons, also known as Long-Term Care Law or LAPAD [13]. This law was an extension of the Spanish Welfare State model, making the long-term care system its fourth pillar, alongside health care, public education, and social security [5].

The LTC system in Spain is not unconnected with advances in technology, and the LAPAD itself contemplates remote assistance and technological development in R+D+I [19]. In this sense, the European Union recommends using technology to improve the quality of life of the elderly, promoting their autonomy and independence. To this end, for more than a decade, it has launched a strategy of research and advocacy on public policies where technological platforms and devices are linked to the well-being of the elderly, within the framework of "Ambient Assisted Living" [1, 14]. In this context of demographic aging and institutional commitment to the introduction of technologies in care for the elderly, our analysis of the relationship between technologies and the long-term care system in Spain is developed.

2 Objectives and Methodology

This article is part of the research line on public policies on aging of the Project "International Institute for Research and Innovation on Ageing (4IE+)". It aims to identify the main issues related to the long-term care system in Spain and its relationship with technology. This is a first approach to this topic, where we explore the possibilities of giving continuity to the results in future research.

Regarding the methodology used, we have realized a scoping review of the long-term care system in Spain. This has allowed us to identify the main issues in the scientific literature. Subsequently, we have analyzed these issues by contrasting them with articles that address them from the field of technologies.

3 Long Term Care System in Spain

The idea that in Spain, the care of the elderly corresponds to a "familist" model of the Welfare State occupies a central place in the reflections on the long-term care system [2, 9, 18]. The main characteristic of this model is the leading role played by the family as a provider of care for the elderly [31]. This model is particularly widespread in the countries of Southern Europe [9]. It also generates significant gender inequalities by encouraging women to be responsible for the care of the elderly [25], with a cultural model that fosters this reference.

Although the "familist" model is the ideological support of the culture of care in Spain, a series of socio-cultural changes experienced in the country have relativized some of the patterns of behavior characteristic. Factors such as incorporating women into the workforce or developing the LAPAD have led to a system with a wide range of care services, both public and private, offered outside the family setting [33]. In this regard, it is worth noting the role of nursing homes, which are becoming the preferred resource for persons over 80 years of age or with severe difficulties in their autonomy

[2, 3, 33]. This phenomenon is particularly relevant in the configuration of the Spanish LTC system and is one of the guiding principles in the planning of public policies on long-term care for the elderly.

However, the high mortality due to the pandemic of COVID 19 in nursing homes has motivated a scientific, political, and social debate on deinstitutionalization. Fantova [15] proposes it to reduce the possibilities of transmission in this type of resource since fewer residents and prevention measures are facilitated. Consequently, the pressure on workers will also be reduced. In this regard, it should be remembered that any policy of deinstitutionalization of the elderly must be accompanied by reinforcements in the public services that care for them at home because otherwise, the tasks of care will fall back on the women of the family. To avoid such situations, as Deusdad points out [12], there must be clear policy guidelines with a gender perspective regarding care in the home.

Another of the issues highlighted in the analysis of the Spanish LTC system is its multilevel nature. It involves the various government levels[1] in implementing long-term care policies [9, 16, 26]. The channel for the participation of the administrations is the SAAD[2], where the execution of public policies is coordinated according to their competencies. Furthermore, this system includes public resources and duly accredited private-consultants to optimize the resources available for the care of dependent adults. For specifically inter-institutional coordination, there is the "Territorial Council of Social Services and of the System for Autonomy and Care for Dependency", which is a multilateral cooperation agency similar to the sectoral conferences, with the participation of the State, the autonomous communities, and, where appropriate, the local entities [19].

This multilevel model of the LTC system is highly delegated to the regional and municipal levels [11]. In this model, the services provided by city councils play an increasingly important role, which is characteristic of the most advanced systems, such as the Nordic ones. Although in Spain, the weight of regional policies is still undeniable [9].

Several authors emphasize the complementary nature of the policies on care for dependent adults implemented at different levels of government [6, 9]. However, authors such as Lozano Peña and García Bustos [26] and Sáenz Royo [36] highlight the difficulties in implementing LTC policies due to their imbalances of the statal underfunding of the regional treasuries and their limited capacity to collect funds. Moreover, since the beginning of the COVID-19 pandemic, some conflicts of competence have arisen between administrations that directly affect the LTC system, with the wide dispersion of regional regulations, especially nursing homes absence of agreed and uniform protocols [28].

The next recurring issue in the literature reviewed is the development of the LAPAD, and the impact of the 2008 economic crisis. On the one hand, there is a consensus among the authors that the entry into force of the LAPAD on January 1, 2007, represented a substantial normative advance, despite the difficulties encountered in its implementation in the form of public policies [8, 25, 39]. The Law proposed a regulatory improvement in the framework of care for dependent persons, guaranteeing universal access to a

[1] In the case of Spain, the state, regional and municipal levels.

[2] System for Autonomy and Care for Dependency.

wide range of public services (prevention and promotion of personal autonomy, home help, remote assistance, nursing homes, etc.) [39]. It also represented an opportunity to consolidate the decentralization of care for dependent persons and to create specialized administrative architectures in environments that are closer to citizens, such as the autonomous community and the municipality [24].

However, the full development of the LAPAD was hampered by the economic crisis of 2008. The economic slowdown led to severe difficulties in terms of revenue collection for investment in public policies. And austerity policies, which were aimed at overcoming the crisis, put a considerable brake on social spending [34].

Although there were clear signs of economic recovery from 2015 onwards, the long-term care system in Spain continued to carry over the consequences of the 2008 crisis to the present day. To this, is added a new crisis, that the COVID-19 pandemic, which in addition to causing significant stress on the resources of the LTC system, has an impact on the economy that is still difficult to measure. However, the institutional responses seem to have a different tone to that of austerity in the case of the current economic crisis. The Ministry of Social Rights has designed a shock plan to promote dependency policies, with an investment of more than 600 million euros in 2021. Nevertheless, at present[3], its execution depends on the approval of the General State Budget [37].

Linked to the difficulties of implementing the long-term care policies contemplated in the LAPAD is the labor informality of caregivers in Spain. One of the main contributions of the Law was the responsibility of the administration for the care of dependent persons, in addition to the promotion of labor regulation of non-professional caregivers. However, this desire was not reflected in the labor market due to the economic crisis [30, 39]. Furthermore, the "ideal of care" of the "familist" model, which establishes specific resistance to professional care, plays a fundamental role in the difficulties of professionalization of caregivers due to the cultural importance of family care [30]. Moreover, as Spijker and Zueras point out, the high unemployment rates in Southern European societies foster care work development within the informal economy. This informality situation has made invisible the difficulties that this and other highly feminized groups in the care sector have suffered during the COVID-19 pandemic and subsequent outbreaks [10].

4 Technology and the Long-Term Care System for the Elderly

Below, we contrast the main issues related to the long-term care system in Spain, with technological solutions that are being considered in various fields such as health, aging, or loneliness.

The "familist" model tends, due to cultural inertia, to prolong the stay of the elderly at home as much as possible. This fact coincides with the idea that is being imposed, after the impact of the pandemic in the nursing homes, of the deinstitutionalization of the elderly to develop their life at home. These phenomena point to what the scientific literature refers to as "home based care", that is, overcoming the institutionalized model and a proposal for care in the home [40]. Moreover, in this field, technological solutions

[3] October, 08, 2020.

emerge strongly within what we call e-healthcare; that is, technologies to improve health and care. In many cases, with determined institutional support, such as the European Union provided through the "Ambient Assisted Living" program [1].

Within the framework of e-healthcare, we find many devices and strategies that can help prolong the stay of the elderly in their homes by improving their autonomy. For example, the cell phone, a device that may be familiar to many of the elderly, has a prominent role in e-healthcare strategies. Specific applications can be created for health and care issues or use existing resources such as SMS or instant messaging applications such as Whatsapp or Telegram. SMS has proved particularly useful in the area of therapeutic adherence for the elderly, and a large sample of studies has revealed very positive results [22].

Robots are another type of technological assistance at home that is being bet. We find robots of different types. Assistance robots help with daily tasks such as personal hygiene, cooking, or cleaning the house. Robots of accompaniment to diminish the sensation of loneliness. Or surveillance robots to deal with therapeutic adherence to medication or control vital signs, among other functions. It should also be noted that many people still feel uncomfortable with this type of technology and that professionals have some doubts about its usefulness [23].

Other technological solutions, which help to prolong the autonomy of the elderly, are the "wearables". These are devices that accompany the user. They can be in the form of a bracelet, smartwatch, or be incorporated into clothing or shoes. They are especially useful for monitoring the health of the user [27].

In the field of technological assistance for the promotion of autonomy of the elderly, the International Institute for Research and Innovation on Ageing (4IE+) has several lines of research open. The use of existing voice assistants, such as Alexa, for reminding people of their medication intake [20], the Feedelio application for research on nutrition and the elderly [35], or the development of a food monitoring application for the elderly [29], are some examples. However, we would like to highlight the Assistant on Care and Health Off-line (A.C.H.O.), a voice assistant that can be used as a reminder of medical visits and medication intake, characterized by its capability to function without an internet connection. This makes it particularly interesting for working in homes where only older people live, and there is often no internet connection, or in rural areas where there is less coverage of this service [21]. This device is in the usability testing phase, with very positive perspectives for developing new functions.

On a different theme, some of the problems associated with the multilevel model of the Spanish long-term care system can be reduced with technological solutions. An e-administration, with an optimal flow of information between the different administration levels, would help avoid some of the overlapping competencies that we have seen during the pandemic. To this end, there must be clear and agreed-upon protocols for action. Deusdad and Riccó [13] point out that for workers in the care sector involved in administrative processes, such as social workers, the digitalization of bureaucratic processes increases efficiency and consequently improves care. However, they insist on the need for coordination between areas and administrations to provide adequate care. Likewise, this type of electronic administration should be adapted to facilitate its use by the elderly and their caregivers, simplifying the procedures and thus alleviating the

administrative burden that, on numerous occasions, is involved in applying for aid linked to the LAPAD.

Regarding the LAPAD, mentions of technology are few but relevant. On the one hand, telecare plays a prominent role. It has its own epigraph in the catalog of services included in article 15. Also, article 22 develops the right of dependent persons to this type of care, which the Law defines as "assistance to beneficiaries through the use of communication and information technologies, supported by the necessary personal means, in immediate response to emergencies, or situations of insecurity, loneliness, and isolation". On the other hand, the tenth additional provision, whose title is "Research and Development", expressly mentions that the public authorities shall promote research to improve the quality of life of dependent persons. Furthermore, social organizations and other agents involved in developing regulations on technologies, products, and services for dependent persons are promoted [19].

Deinstitutionalization and the "home based care" model may be an interesting key to exploring the impact of crises on the LTC system. As Woods and Kong [41] point out, this formula of domiciliary care is less costly for public administrations. This is because residential resources for the elderly have a high cost for the administration. With the extension of the stay in the homes, part of the economic resources destined to residential homes for the elderly could be allocated to deinstitutionalization programs. In this way, the budgetary items would be optimized and impact more users and with more quality.

Regarding the issue of informal caregivers, evidence points to the idea that technologies applied to care help reduce the perception of task overload experienced by this group. This also decreases the high levels of stress suffered by non-professional caregivers since the physical and psychological dependence on them is reduced [32]. However, it should also be noted that this group of informal caregivers, where we find family members of elderly dependents and workers in the informal economy, has difficulty accessing these technologies. If they have access to them, it is not because they are caregivers, but because the dependent older adult is a beneficiary of this care support technology. Therefore, it cannot be easy to train these informal caregivers in their use. Public policymakers must take this situation into account when promoting the use of technologies in care.

5 Conclusions

In the different issues that we identify as the main ones in the scientific literature on the long-term care system in Spain, we find different contributions that technology can make.

Concerning home care, typical of the "familist" system, and the commitment of public administrations to deinstitutionalization, there is a whole range of devices aimed at "home based care". The use of the cell phone either with specific applications or using existing ones, robots, or voice assistants are examples. These would not only help to promote the personal autonomy of older people but can also be a positive support for caregivers. Although in the case of informal caregivers, access to these technologies poses some difficulties that should be considered by those responsible for public policies on care.

In the field of home care and technologies, we consider that a very interesting contribution can be made with qualitative methodologies from the social sciences. Furthermore, there is a whole field of ethnographic work with assistive technology users to continue to deepen.

Also linked to the paradigm of "home based care" and its technological support is the idea that home care is more effective in terms of budget. Thus, an increase in at-home care for the elderly can help make LTC systems more resistant to economic crises. That is another way of study that we consider interesting to explore.

About the multilevel model of the long-term care system, digital administration improvements can help reduce communication problems and overlaps between different administrations. To this end, these improvements must be accompanied by clear protocols. Also, a user-oriented e-administration can help simplify the tedious procedures that accompany applications for aid related to long-term care and reduce waiting times in the granting.

Finally, although the LAPAD explicitly contemplates research in technologies and remote assistance, it would be very positive to adequate this regulatory framework to the new technological developments in the field of care for the elderly.

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